A B S T R A C T

ITERATIVE DECODING AND EQUALIZING METHOD FOR HIGH SPEED COMMUNICATIONS ON MULTIPLE ANTENNA CHANNELS DURING TRANSMISSION AND RECEPTION

An iterative decoding and equalizing device for high bit rate communication over frequency-selective channels with multiple transmit and receive antennas, said device including a decision feedback equalizer adapted to receive data from different receive antennas and including a forward filter (9) and a recursive backward filter (12) fed with calculated weighted reconstituted data from the output of a decoder (13) fed by decision means (11) and means for subtracting the output of said backward filter (12) from the output data of the forward filter (9) whereby the subtracted data is fed to the input of the decision means (11) with the output of the decoder (13) and the decision means (11) produce a statistic which is forwarded to a channel decoder with weighted inputs and outputs and said decision means (11) take into account the space noise correlation at the output of the subtraction means (10) and the decision means (11) and the decoder (13) are separated by space-time interleaving at bit level, which device is characterized in that the forward filter (9) and the backward filter (12) are iteratively adapted to minimize the mean square error at the output of the subtractor (10).

Translation of the title and the abstract as they were when originally filed by the Applicant. No account has been taken of any changes that may have been made subsequently by the PCT Authorities acting ex officio, e.g. under PCT Rules 37.2, 38.2, and/or 48.3.